# Applied Discrete Mathematics Degree Option 

## SAMPLE PROGRAM OF STUDY <br> Total of 120 credit hours required for graduation <br> There is considerable flexibility in designing a program of study. The example given below is not likely to fit every situation and is provided for information as you develop your own plan with your academic advisor.

| Fall Semester Freshman |  | Credits <br> 4 | Spring Semester Freshman |  | Credits |
| :---: | :---: | :---: | :---: | :---: | :---: |
| MATH 1225 <br> MATH 1004 <br> ENGL 1105 | Calculus of a Single Variable Pathway 5 f |  | MATH 1226 Calculus of a Single Variable Pathway $5 f$ <br> MATH 1044 Discovering Mathematics II (spring only) <br> CS 1114 Introduction to Software Design <br> ENGL 1106 First-Year Writing, Pathway 1f Pathway $7^{1}$ |  | 4 |
|  | Discovering Mathematics I (fall only) | 1 |  |  | 2 |
|  | First-Year Writing, Pathway 1f | 3 |  |  | 3 |
|  | Pathway 2 | 3 |  |  | 3 |
|  | Pathway 3 | 3 |  |  | 3 |
|  | Pathway 6a |  | 3 |  |  | 15 |
|  |  |  | 17 |  |  |  |
| Fall Semester Sophomore |  | Credits | Spring Semester Sophomore |  | Credits |
| $\begin{array}{lr} \text { MATH } 2114 \\ \text { MATH } 2204 \\ \text { CS } & 2114 \end{array}$ | Introduction to Linear Algebra | 3 | MATH 2214 <br> MATH 3034 <br> CS 2505 | Intro to Differential Equations Pathway 5a | 3 |
|  | Intro Multivariable Calculus | 3 |  | Intro to Proofs (Prereq: C in MATH 2114) | 3 |
|  | Software Des \& Data Structures Pathway 6d | 3 |  | Introduction to Computer Organization | 3 |
|  | Pathway 3 | 3 |  | Pathway 2 | 3 |
|  | Pathway 4 | 3 |  | Pathway 4 | 3 |
|  |  | 15 |  |  | 15 |
| Fall Semester Junior |  | Credits | Spring Semester Junior |  | Credits |
| MATH 3124 <br> MATH 3214 <br> MATH 3134 <br> CS 3114 | Modern Algebra | 3 | MATH 3144 <br> MATH 3224 <br> STAT | Linear Algebra I | 3 |
|  | Calculus of Several Variables | 3 |  | Advanced Calculus | 3 |
|  | Applied Combinatorics \& Graph Theory | 3 |  | STAT 4105², STAT 4705, or STAT 4714 | 3 |
|  | Data Structures and Algorithms | 3 |  | Free Elective | 3 |
|  | Free Elective | 3 |  | Free Elective | 3 |
|  |  | 15 |  |  | 15 |
| Fall Semester Senior |  | Credits | Spring Semester Senior |  | Credits |
| MATH 4XXX  <br> MATH 4XXX  <br> CS 4104 | 4000-level MATH course ${ }^{3}$ | 3 | MATH 4XXX MATH 4XXX | 4000-level MATH course ${ }^{3}$ | 3 |
|  | 4000-level MATH course ${ }^{3}$ | 3 |  | 4000-level MATH course ${ }^{3}$ | 3 |
|  | Data and Algorithm Analysis ${ }^{4}$ | 3 |  | Pathway 1a | 3 |
|  | Free Elective | 3 |  | Free Elective | 3 |
|  | Free Elective | 3 |  | Free Elective | 3 |

${ }^{1}$ In Pathways, some courses can be used for Pathway Concept 7 plus one other Concept, but no other double-counting is permitted.
${ }^{2}$ See Timetable of Classes for prerequisite information.
${ }^{3}$ At least two courses from 4124 (fall only), 4134 (spring only), 4144 (spring only), 4175, 4176, 5114 (spring only), 5454 (fall only), 5464 (spring only) must be included. At most one of 4044 and 4334 is allowed. At most one of 4425 and 4564 is allowed. 4574, 4625, 4626, 4644, 4654, and 4664 may not be used. Students must petition the Associate Chair to use 4974, 4984, or 4994. Courses that do not count toward the in-major GPA may not be used.
${ }^{4}$ CS 4114 and CS 4124 are allowable substitutions for CS 4104 .

